



003295.098707

REMARKS

The present amendment is respectfully submitted in response to the Office Action of January 8, 2004 on the above-identified application. The/ Applicants note with appreciation that the claims have been indicated as being allowable.

Turning to page 2 of the action, the Abstract was objected to for including the legal phraseology "said". The Abstract has been amended above to change this word to "the".

A clean copy of pages 1 and 2 is attached hereto. It includes the changes made thereto in handwriting during the International Stage. Section headings have been added where appropriate.

Claim 1 has also been amended to remove the underlining objected to by the Examiner, and to correct one misspelling (controls). Claims 4, 6 and 8 have been amended to remove multiple dependencies.

An early allowance of claims 1 through 8, as amended, is respectfully requested.

Respectfully submitted,

John F. Gulbin  
Registration No. 33,180

212-297-5800

Pitney, Hardin, Kipp & Szuch LLP  
685 Third Avenue  
New York, NY 10017-4024

# PROCESS AND MACHINE FOR MERGING ORDERED BATCHES OF OBJECTS, IN PARTICULAR BATCHES OF MAIL ITEMS

## BACKGROUND OF THE INVENTION

The invention pertains to a process for merging in particular batches of mail items such as letters, each previously ordered according to the order of distribution of the mail items in the mailman's round, so as to constitute a single batch of mail items which is also ordered according to the order of distribution of the mail items in the mailman's round.

In mail distribution offices, it is usual practice to merge or bundle together batches of mail items which originate from various sorting offices so as to constitute a single batch of mail items which is prepared for the mailman's round. Hitherto, the merging of these batches of mail items has been carried out manually and therefore requires a great deal of time. EP – 834354 discloses a process according to the preamble of claim 1 wherein the destacking-units, disposed in succession along the conveyor path, deliver the objects directly to the conveyor in a time sequence determined by their transport along the conveyor path. US 4,244,672 discloses a process for merging batches of objects wherein the destacking units deliver the objects to the conveyor through a recirculation buffer.

## SUMMARY OF THE INVENTION

The purpose of the invention is to propose a process for automatically merging several batches of mail items with short transit time loops associated to the destacking units.

To this end, the subject of the invention is a process for merging in particular batches of mail items as defined in claim 1.

With the process according to the invention, several batches of mail items can be automatically merged in a single pass. The postal address recovered by the reading device can be a bar code which is now widely used in postal sorting offices.

It has been observed that it is preferable to use several storage loops of low storage capacity associated with a destacking unit rather than a single storage loop of larger storage capacity so as to transfer the mail items more speedily to the conveyor. The number of storage

loops associated with a destacking unit and the storage capacity of each loop is a compromise between the speed of merging of the batches of mail items and the interclassification window required between batches of mail items.

An exemplary implementation of the process according to the invention is described hereinafter in detail and illustrated in the drawings.

## BRIEF DESCRIPTION OF THE DRAWINGS

Figure 1 shows very diagrammatically a machine for merging batches of mail items according to the process of the invention.

Figure 2 is a flowchart illustrating the manner of operation of the machine shown in Figure 1.

## DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

In Figure 1, the machine for merging batches of mail items according to the process of the invention comprises several destacking units, here two destacking units D1 and D2, each able to serialize mail items of a batch of mail items which is preordered for the mailman's round, here the batches L1 and L2 which are loaded respectively into the destacking units D1 and D2.

The exit of each destacking unit is linked to one or more dynamic-storage magazines which is or which are associated with the relevant destacking unit. In each dynamic-storage magazine, the mail items indicated by A are moved continuously in series around a storage loop.

In the example of Figure 1, the exit of the destacking unit D1 is linked to two storage loops M11 and M12 by way of a series conveyor C1, the entrances E of the two storage loops M11 and M12 being linked in parallel to the conveyor C1.

The destacking unit D2 is linked to two other storage loops M21 and M22 by way of another series conveyor C2. The entrances E of the two storage loops M21 and M22 are linked in parallel to the conveyor C2.